

# (12) United States Patent

#### Shimuta et al.

### (54) PULSE WAVE PROPAGATION TIME MEASUREMENT DEVICE

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Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/750,260

(22)Filed: Jun. 25, 2015

(65)**Prior Publication Data** 

> US 2015/0366473 A1 Dec. 24, 2015

#### Related U.S. Application Data

application (63) Continuation of No. PCT/JP2014/051464, filed on Jan. 24, 2014.

(30)Foreign Application Priority Data

(51) Int. Cl. A61B 5/04

A61B 5/021

(2006.01)(2006.01)

(Continued)

(52) U.S. Cl.

CPC ...... A61B 5/02125 (2013.01); A61B 5/0245 (2013.01); A61B 5/02416 (2013.01);

(Continued)

(58) Field of Classification Search

CPC ...... A61B 5/02125; A61B 5/02416; A61B 5/0245; A61B 5/0452; A61B 5/0456; A61B 5/7289

See application file for complete search history.

## (45) Date of Patent:

(10) Patent No.:

Dec. 6, 2016

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#### **ABSTRACT**

A pulse wave propagation time measurement device including a first signal processor section that filters an electrocardiographic signal detected by an electrocardiographic sensor, a second signal processor section that filters a photoelectric pulse wave signal detected by a photoelectric pulse wave sensor, peak detectors respectively that detect peaks of the electrocardiographic signal and the photoelectric pulse wave signal, delay time obtaining sections respectively that obtain a delay time of the electrocardiographic signal and of the photoelectric pulse wave signal, peak correctors respectively that correct the peaks of the electrocardiographic signal and the photoelectric pulse wave signal based on the delay time of the electrocardiographic signal and the photoelectric pulse wave signal, and a pulse wave propagation time measurement section that obtains a pulse wave propagation time from a time difference between the corrected peaks of the electrocardiographic signal and the photoelectric pulse wave signal.

#### 20 Claims, 9 Drawing Sheets

